

HEATING AND LIGHTING PLANT FOR GOVERNMENT
HOSPITAL FOR THE INSANE.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

A COPY OF A COMMUNICATION FROM THE SECRETARY OF THE
INTERIOR SUBMITTING A REVISED ESTIMATE OF APPROPRIA-
TION FOR GOVERNMENT HOSPITAL FOR THE INSANE.

JANUARY 7, 1902.—Referred to the Committee on Appropriations and ordered to be
printed.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, January 6, 1902.

SIR: I have the honor to transmit herewith for the consideration of Congress copy of a communication from the Secretary of the Interior of the 23d ultimo, submitting a revised estimate of appropriation, \$260,000, in lieu of the estimate of \$150,000 included on page 230 of the Book of Estimates for 1903 under the title "Buildings and grounds, Government Hospital for the Insane," for central heating and lighting plant.

Respectfully,

L. J. GAGE,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 23, 1901.

SIR: I have the honor to transmit herewith a communication from the Superintendent of the Government Hospital for the Insane, dated December 19, 1901, in which he incloses estimates of Horton & Hemenway and Burkel & Co. of the cost of the central heating and power plant for the Government Hospital for the Insane, amounting to \$260,000. By reference to the annual estimates submitted for the Government Hospital for the Insane for the fiscal year ending June

30, 1903, it will be observed that there was a sum incorporated in said estimates for this purpose, amounting to \$150,000. The superintendent states that this estimate was only an approximate one and made without any reliable data to guide him at that time, and that the amount that will be actually required for said plant will be the sum as above stated, namely, \$260,000.

The superintendent further requests that this revised estimate be substituted for the item of \$150,000 incorporated in the general estimates above mentioned.

The recommendations, as made by the superintendent, meet with my approval, and the revised estimate for the amount desired is respectfully forwarded to your Département for the appropriate action of Congress.

Respectfully,

THOS. RYAN,
Acting Secretary.

The SECRETARY OF THE TREASURY.

GOVERNMENT HOSPITAL FOR THE INSANE,
Washington, D. C., December 19, 1901.

SIR: I have the honor to inclose herewith copies of a communication from Messrs. Shepley, Rutan & Coolidge, architects of the extension to this hospital, and from Buerkel & Co., heating contractors and engineers to them, and of Messrs. Horton & Hemenway, general contractors for the extension, also to the architects. This correspondence all refers to the estimated cost of the central heating and power plant for the hospital, for which an estimate of \$150,000 was included in the estimate submitted with the last annual report. This estimate was only an approximate one, and made without any reliable data to guide us. As shown by the inclosed correspondence, the amount stated by the architects and engineers to be necessary is considerably in excess of this sum, to wit, \$247,604. This estimate does not include architects and engineers' fees, which will be 5 per cent of this amount, \$12,380.20, making a total amount of \$259,984.20, or in round numbers, \$260,000.

If this meets your approval, I beg to request that this revised estimate be forwarded, to be substituted for the item of \$150,000 in the general estimates submitted with the report.

The reference in the letter of the architects to the use of the basement and corridors of certain of the buildings for ducts for the heating pipes is in response to an inquiry of mine as to whether this arrangement would not be more economical and save a certain amount of the tunnel. From their description I am inclined to think the suggestion which I made is not practicable.

I have discussed the matter with the executive committee of the Board of Visitors, and if it is deemed desirable to have their written approval of this modification of the estimates I will see that it is procured.

Very respectfully,

A. B. RICHARDSON,
Superintendent.

The SECRETARY OF THE INTERIOR,
Washington, D. C.

AMES BUILDING, *Boston, December 11, 1901.*

DEAR SIR: We have gone into the question of the power plant for the hospital buildings very carefully and have gotten absolute prices for all the work except the electrical plant. The prices for the latter are approximate; in other words, we think the National Electrical Supply Company did not go into it as carefully as we have with the heating and the buildings. The following prices are for the twelve buildings under contract and for building "A" in addition:

For the heating plant, which includes everything outside of the present contract for piping the buildings.....	\$124,000
For the engines and generators.....	35,000
For switch board.....	4,500
For wiring.....	12,500
For the power house.....	23,609
For the chimney.....	14,745
For 4,750 linear feet of tunnel, 4 feet wide and 5 feet high, at \$7 per linear foot.....	33,250
Total.....	247,604

The above price for the power house does not include the trestle nor coal bin.

Inclosed we send you copy of the estimates we have received from Buerkel & Co., and from Horton & Hemenway, which explain the matter more in detail. We also inclose you a tracing of the layout of the boiler house with future extension shown on the plan by dotted line. With reference to the size of the tunnel Mr. Buerkel thinks that none of them should be less than 4 feet wide and 5 feet high, as this is about the smallest in which a man could work comfortably and the smallest size in order to take out a length of pipe.

With reference to your question about using corridors and basements of "A," "B," and "C," and the tunnels connecting "A" with "B" and "C" for running the main steam pipes and returns, leaving out the tunnels, we would say that after carefully considering this matter we doubt if any money could be saved. We figured the number of feet saved in the length of tunnel by doing this would be about 700 feet instead of 1,000 as you suggest. This 700 feet at \$7 a foot would be \$4,900, and there would probably be that amount of money spent in making necessary changes in the buildings and the plant in order to accommodate the mains and returns.

In buildings "B" and "C" we would have to change the planning of the basement in order to get the fan and engine rooms on the other side of the corridor from which they are now placed. All the heating ducts in the three buildings would have to be taken out of the corridors and placed in the rooms and unexcavated spaces alongside of the corridors. Where the heating ducts would have to cross the corridors there would not be room, as both the mains and heating ducts come above the doors. The heating ducts would have to go under the floor to cross these corridors, and there again would interfere with the ducts for return pipes and drains. In "B" and "C" the mains would show in the waiting rooms in front of the elevator doors. The corridors at ends of "B" and "C," which now are only 4 feet deep under the beams, would have to be excavated and the foundations lowered in order to make room for both the mains and ventilating ducts. These walls in building "C" we understand are already built.

We tried another scheme, putting the mains in the rooms and unexcavated space alongside of the corridors, thinking this might be a way out of the difficulty, but we encountered about the same obstacles that we did in trying to place them in the corridors.

If there are any points in this letter which you do not understand, or if you wish to consult us further with regard to the power plant, Mr. Rutan and Mr. Oakes will see you in Washington soon after Christmas. If you wish to see them before that time, they could arrange to go down any time you wish.

Very truly, yours,

SHEPLEY, RUTAN & COOLIDGE.

Dr. A. B. RICHARDSON, *Superintendent.*

DECEMBER 4, 1901.

GENTLEMEN: With reference to the power and heating plant for the hospitals for the insane at Washington, D. C., we are pleased to advise you as follows: The plant is to comprise five 300-horsepower water-tube boilers, 1,500 horsepower, set in a battery in brickwork and fitted with all fixtures complete, including a damper regulator and shaking grates.

The boilers to be connected to the chimney by means of a wrought-iron flue, one-fourth inch stock, fitted with uptakes and dampers and cleanouts complete.

All the high and low pressure piping to and from the engines, pumps, and buildings, A, B, C, E, I, J, K, L, M, N, P, Q, and R, furnishing all the necessary high and low pressure valves and fittings, also all the reducing valves and by-passes, all by-passes to have a full complement of valves, so that reducing valves may be repaired at any time without interfering with working of the system; all high-pressure fittings to be extra heavy, and all fittings above 4 inches, also all valves to be flanged; all joints in high-pressure system, also all low-pressure joints above 6 inches, to be of the "Van Stone" patent.

Each engine supply to be fitted with steam separator of size called for, and the main exhaust, 16 inches, to be supplied with a grease extractor, back-pressure valve, and exhaust head.

There will be two feed water heaters of capacity of 1,500 horsepower each; each to be so connected and valved that either one or both may be used as required; each to have a by-pass with a full complement of valves.

A receiving tank will be furnished and piped up complete to two brass-fitted feed pumps, each to be 10 by 6 by 10 inches; all piping and fittings between tank and pumps to be of heavy brass; pumps to be so piped and valved that either one or both may be used as required.

All piping between pumps and feed water heaters, also between the heaters and boilers, to be of heavy brass; the boiler feed to run along boiler fronts with a branch to each boiler, each branch to be fitted with a lubricator and a pump regulator.

All necessary drips and valves, also traps and connections, will be furnished and run. All piping outside of trenches will be properly supported or hung, and all piping in trenches will be either suspended or rest on expansion chairs, as may be best suited to the work. Expansion joints and bends, also anchors, will be furnished wherever required.

All piping and fittings, including high and low pressure, will be covered with "navy fire felt covering," same as will be used in buildings, and the receiving tank, feed-water heaters, and smoke pipe will be covered with asbestos blocks covered with an asbestos cement covering, all properly put on.

In the engine room will be placed a gauge board fitted with the necessary high and low pressure gauges, also a "Howard" clock, all to be brass and 12 inches in diameter; all piping between boilers and gauge board to be of brass.

Blow-off piping will be run from each boiler to main blow-off, thence to blow-off tank, connection from which will be run to drain; also vapor pipe, from which will run to roof.

Our estimate includes all the miscellaneous articles necessary to make a complete and perfect working apparatus of the foregoing, including all labor, freight, cartage, fares, and sundry expenses.

This, in a general way, gives you a fair idea of the requirements, and in order that we might get at the items intelligently we have laid the plant out for the most part, and have secured bids on all pieces of the apparatus concerning which there was any quotation as to prices, so that our approximate is a close one.

Our estimate for this work complete is \$124,000.

Inclosed herewith we hand you a copy of a letter which we wrote to the National Electrical Supply Company, Washington, D. C., in reply to which we received their approximate estimate, as follows:

Engines and generators.....	\$35,000
Switch board	4,000
Wiring	10,000 to 15,000

"The price on engines and generators includes foundations, delivery, and erection."

Our price on steam work does not include foundations or mason jobbing, such as cutting, etc.

In the steam plant we have figured for everything to be of the very best, and we trust you may be able to convince Dr. Richardson that in the end this is unquestionably the cheapest.

Anything other than the very best in a plant having an initial pressure of 120 pounds is not only uneconomical but hazardous.

One word about the conduits: We note you talk of making them 3 by 4 feet. We think this is poor engineering, as it will be absolutely impossible to remove a pipe or make any considerable repairs within the conduits without digging down to them from above and patching up afterwards. We think the smallest should not be less than 4 by 5 feet, with frequent manholes.

We await your further advices before going into the actual layout and specifications.

Respectfully,

BUERKEL & Co.

SHEPLEY, RUTAN & COOLIDGE.

PROVIDENCE, R. I., *December 10, 1901.*

GENTLEMEN: We estimate the cost of proposed power house at the Government Hospital for the Insane, Washington, D. C., according to sketch plan submitted, at the sum of \$23,609.

We estimate the cost of chimney 225 feet in height at the additional sum of \$14,745, and estimate the cost of tunnel 4 feet wide, 5 feet high, inside measurements; bottom to be 2 or 3 feet below cellar floors of the various buildings; to have concrete floor 6 inches thick, extending 6 inches beyond outside walls of tunnel on each side; said walls to be three courses of brick to the spring of the arch; the arch to be two courses of brick, all in Portland cement mortar, for the sum of \$7 per linear foot.

It is contemplated doing no waterproofing of this tunnel more than a coat of hot pitch over the top, down to the spring line; neither is contemplated any granolithic finish on the floor of tunnel—simply leaving the concrete the same as the top of any foundation concrete.

We feel somewhat in doubt whether we would care to recommend the use of concrete for the side walls, as there might be more trouble from the percolation of water than with the brick walls; but if on consideration it seemed advisable to use concrete for the side walls up to the spring of the arch, in place of brick, it would reduce the cost of the tunnel about 35 cents per linear foot.

We have gone into this tunnel matter pretty carefully, with the view of reducing the cost to the lowest point, and we feel that we have done so; but still have made a price for which we would take the contract to-day, if awarded to us.

Trusting that it will be of service to you, and awaiting your further inquiries, we remain

Yours, truly,

HORTON & HEMENWAY.

MESSRS. SHEPLEY, RUTAN & COOLIDGE.

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